INTRODUCTION

The Hanford Site Performance Report provides monthly status for work performed by:

- U.S. Department of Energy, Richland Operations Office (RL);
- Project Hanford Management Contract (PHMC) through Fluor Daniel Hanford, Inc. (FDH) and its subcontractors;
- Environmental Restoration Contract through Bechtel Hanford Inc. (BHI), and its subcontractors;
- Pacific Northwest National Laboratories (Pacific Northwest) for Science and Technology support to the Environmental Management (EM) mission.

A summarization of these activities follows.

SUMMARY

Notable accomplishments in April include submitting an interim stabilization planning summary for funding for Case 4; completing a Readiness Assessment and declaring readiness for operation of Project W-058, Cross-Site Transfer Line," supernate line (TWR3.4.4); submitting tank-by-tank Safety Evaluation Report (DNFSB 93-05/009.008 5.6.31h; TWR1.2.17); completing Baseline Comparison Report for the first tank retrieval system (Project W-211) (DNFSB 92-04/002 5.2.1b); declaring WRAP readiness and initiating contractor Operational Readiness Review (ORR); continuing the increased Effluent Treatment Facility FYTD (CERCLA) feed processing efficiency (70 gallons per minute [gpm] versus 50 gpm target) WM4.1.1); initiating pre-operation testing at the Canister Storage Building (CSB); completing erection of all Cold Vacuum Drying Facility (CVD) building panels; receiving formal RA approval for restart of PFP Group 1 Operations, completing two fissile material moves with management oversight plans; receiving approval of Waste Encapsulation and Storage Facility (WESF) Basis for Interim Operation (BIO); completing removal of sodium systems from 221-T; shutdown and deactivation of the 300 Area Powerhouse ahead of schedule; continuing remediation work at the B/C, D, DR, and 300 Areas ahead of schedule; formally issuing the Groundwater/Vadose Zone Integration Project Plan; and on schedule progress on Interim Safe Storage (ISS) of F and DR Reactors.

Significant issues impacting Hanford Site performance include a low confidence schedule and technical issues in the Spent Nuclear Fuels Project; interim stabilization of single shell tanks; a restriction on fissile material movement at the Plutonium Finishing Plant (PFP); and Year 2000 activities. There are several regulatory and Defense Nuclear Facilities Safety Board (DNFSB) commitments impacted by these issues.

Fiscal-year-to-date (FYTD) cost performance reflects a 4.2 percent (26.5 million) favorable cost variance, which is within the established threshold. There is a 6.9 percent (47.5 million) unfavorable schedule variance, (also within the established threshold), which is primarily attributed to four projects: Tank Waste Remediation Systems ($10.9 million), Spent Nuclear Fuels ($21.7 million), Facility Stabilization ($7.1 million), and Environmental Restoration ($4.4 million).

Fiscal year-to-date (FYTD) milestone performance (Enforceable Agreement [EA], U.S. Department of Energy-Headquarters (DOE-HQ), Field Office, and RL) shows that 146 of 171 milestones (85 percent) were completed on or ahead of schedule; 15 milestones (nine percent) were completed late; and 10 milestones (six percent) are overdue. The overdue milestones are associated with the following six projects: Tank Waste Remediation System (TWRS) - 2, Mission Support - 4, Hazardous Materials Management and Emergency Response (HAMMER) - 1, Facility Stabilization -1, Advanced Reactors Transition - 1, and EM-50 - 1, and do not share a common cause. Eighteen milestones are identified as forecast late; three of these are EA (two in Environmental Restoration [ER] and one in TWRS). Details can be found in the milestone exception reports in each project section beginning on page VI-1.

PROJECT OVERVIEW

In the ***TWRS*** mission area the Readiness Assessment and declaration of readiness for Project W-058, “Cross Site Transfer Line,” was completed on schedule. This effort supports Tri-Party Agreement Milestones M-43-07, “Complete Project W-058, “Replacement of Cross-Site Transfer System,” and M-43-07C, “Cross Site Transfer System Operational," both due May 31. Additionally, four documents were issued: the Tank by Tank Safety Status Evaluation Report; the Tank Characterization Technical Sampling Basis; the Double Shell Tank Specification, Revision D; and the Baseline Comparison of the Double Shell Tank System Specification for Project W-211, “Initial Tank Retrieval System,” functional design criteria.

In the ***Waste Management*** mission area the 200 Area Effluent Treatment Facility (ETF) continued to process Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA) feed well in excess of historical averages and FY 1998 targets (>70 gallons per minute [gpm] versus 50 gpm target). Preparations are also complete and 200 ETF is ready to receive and process N Basin waste water. A 242-A Cold Run Plan was submitted on schedule to maintain facility and personnel readiness in lieu of an evaporator campaign this year, thereby avoiding significant out year costs for a contractor ORR. The Waste Receiving and Packaging (WRAP) facility declared readiness and initiated the contractor ORR.

In the ***Spent Nuclear Fuels*** mission area the Canister Storage Building construction project is 87 percent complete, compared to 91 percent planned. Schedule delays have resulted from the new Multi-Canister Overpack (MCO) sealing strategy. The Cold Vacuum Drying Project (CVD) is 62 percent complete compared to 73 percent planned. Schedule delays have resulted from funding constraints. The first Vacuum Process Skid (VPS) for the CVD Facility was received at the Hanford Site. The initial skid will be used for process testing and model validation at the 306 Building prior to installation at the CVD Facility. The remaining three MCO transport casks were delivered several weeks ahead of schedule. The proposed “high confidence” schedule and budget requirements were also submitted. The schedule has been provided to the Environmental Protection Agency (EPA) and State of Washington, Department of Ecology (Ecology) to support Tri-Party Agreement negotiations. The DNFSB Recommendation 94-1 Implementation Plan change request will be submitted pending these negotiations.

In the ***Facility Stabilization*** mission area all field activities required for B Plant 221-B canyon deck deactivation were completed on schedule, with the exception of final radiological surveys and removal of any combustibles. Other deactivation progress includes completing the isolation and sampling of additional canyon vessels as scheduled. Work is on schedule to complete the final liquid waste transfer to Tank Farms by mid May, with final cell closure by the end of May. One hundred twenty-eight end points were signed off in April, bringing the total number closed to 1,025 (57 percent) for the project. Project W-059, “B Plant Ventilation Safety Upgrade,” construction activities are continuing ahead of schedule. Construction of the WESF Low Level Liquid Waste (LLLW) system

(decoupling from B Plant) is currently one month behind schedule. The delay is due in most part to the discovery of RCRA listed waste (1-1-1 Trichloroethane) in tank 100, requiring increased scope related to regulatory issues with the removal and disposal of the tank. A path forward, approved by Ecology, was developed to relocate the tank and its contents to the B Plant canyon. The raw data results for 303K RCRA closure sampling has revealed lead contamination in the trench. The level of contamination, which is above the cleanup standard will prevent the interior of the building to be clean closed, adversely impacting the July 31 milestone completion date. A pre-existing condition report has been completed. A path forward for the 303K closure issues was developed. Ecology will join the effort to establish a consolidated path forward. The formal readiness assessment approval for restart of Group I Operations was received and PFP is focused on developing a path forward in response to RL Fissile Material Movement Restriction (FMMR) Operations Readiness Review (ORR) on Group II Operations. The facility also continues to concentrate on recovery from the May 14, 1997, Room 40 chemical over pressurization incident and supporting the PHMC internal Facilities Evaluation Board (FEB) evaluation response. The B Cell project continues to be approximately ten months behind schedule due to radiological and waste container characterization issues involving most of the grout containers. The revised Radiochemical/High-Level Vault/Low-Level Vault (REC/HLV/LLV) and Associated Areas Closure plan schedule integrates the work scope associated with the May 1999 Tri-Party Agreement milestone M-89-02, “Complete Removal of Equipment and Mixed Waste from B Cell,” with the integrated closure plan baseline. This strategy was presented to Ecology.

In the ***Landlord*** mission area the shutdown of the 300 Area Powerhouse was completed 20 days ahead of schedule. This completes the shutdown of all three of Hanford’s powerhouses, all significantly ahead of schedule and within budget. The design for Project L-286, “200 East Area Sanitary Water Plant Effluent Stream Reduction,” was also completed.

In the ***Environmental Restoration (ER)*** mission area soil excavation is proceeding ahead of schedule. Six additional plumes have been discovered at the B/C Area 116-C-5 remediation site. Site work and bid evaluations for expansion of the Environmental Restoration Disposal Facility (ERDF) have commenced. Five pump and treat systems and one vapor extraction system are operating. All pump and treat units operated at or above planned availability levels. Surveillance and maintenance activities continued. Good progress was achieved on the C Reactor Interim Safe Storage (ISS) project. Installation of the Safe Storage Enclosure (SSE) is slightly behind schedule but the contractor has accelerated work and full recovery is expected. Decommissioning activities at the 233S Plutonium Concentration Facility continued to focus on Operational Readiness Review items.

In the ***Science and Technology*** mission area implementation of streamlining initiatives within Pacific Northwest's waste operations system is currently underway. As a result of an effort to evaluate potential long-term cost re-engineering within the laboratory and Hanford Waste Management Systems, a series of potential initiatives were developed. Significant attention was given to the discovery of polychlorinated biphenyl (PCBs) in paint

chips. This discovery led to incorporation of a management strategy for PCB-paint chips in the Federal Facilities Compliance Act (FFCA), which is under development. The Second Quarter FY 1998 Pollution Prevention Program Report was also submitted.

In the ***Mission Support*** area the FY 2000 Integrated Priority List for the FY 2000 Budget Call was submitted to DOE-HQ on April 21, along with supporting information including performance metrics, budget justification narratives, and site summary level narratives. The Waste Management Project Specification was approved.

In the ***HAMMER*** mission area 337 students were trained in Hazardous Waste classes (2,175 FYTD). Since HAMMER is a new facility, a training baseline is being established in FY 1998; therefore, a comparison to how many students were planned to be trained is not available. Ninety-six representatives from the International Atomic Energy Agency, U.S. West, The Washington CEO, Livingston Rebuild Center, and Lockheed Martin Hanford Corporation toured the HAMMER facility. These tours increase exposure and provide HAMMER with a network mechanism to generate future business opportunities and revenue.

In the ***TWRS Regulatory Unit (RU)*** mission area the Office of Environment, Safety and Health (EH-34), completed an independent assessment to determine readiness to proceed with Part B TWRS-Privatization (TWRS-P) activities. The preliminary report concluded that the RU is ready to proceed with Part B, provided that enhancements are made in certain areas. British Nuclear Fuels Limited, Inc., (BNFL) provided a revised Integrated Safety Management Plan (ISMP). The revision incorporates responses to review questions and deficiencies identified in the RU evaluation report of the BNFL ISMP, Revision 0. Lockheed Martin Advanced Environmental Systems (LMAES) submitted proposed revisions to its Safety Requirements Document and ISMP that acceptably satisfied the six Part A conditions. Several conditions that must be satisfied in the first three months of Part B remain open.

In the ***Advanced Reactors Transition*** mission area technical accomplishments included significant progress on fabrication activities for the Open Test Assembly (OTA) Shear Project and all phases of the Nuclear Energy (NE) Legacies deactivation work. The management review of the Integrated Safety Management System (ISMS) GAP analysis was completed. Additionally, fabrication of several items to assist change out of the P-16 Well Pump Replacement were completed.

COST PERFORMANCE ($M):

	BCWP	ACWP(1)	Variance
Total Hanford Projects	$636.9	$610.4	$26.5

(1) Does not include $54.0 million in cost associated with Privatization contractors.

The $26.5 million (4.2 percent) favorable cost variance is within established +10/-5 percent thresholds and is primarily attributed to the Project Hanford Management Contract (PHMC) $24.5 million passback, efficiencies, and under accrual of subcontracts. Detailed cost variance analysis at the Project Baseline Summary (PBS) level can be found in each project section beginning on page III-1.

SCHEDULE PERFORMANCE ($M):

	BCWP	BCWS	Variance
Total Hanford Projects	$636.9	$684.4	($47.5)

The $47.5 million (6.9 percent) unfavorable schedule variance is within the established +10/-7.5 percent thresholds. As noted earlier the unfavorable variance is primarily attributed to four projects: Tank Waste Remediation Systems ($10.9 million), Spent Nuclear Fuels ($21.7 million), Facility Stabilization ($7.1 million), and Environmental Restoration ($4.4 million). Detailed schedule variance analysis at the PBS level can be found in each project section beginning on page IV-1.

ISSUES

1) **SNF Working to low-confidence (low probability) schedule and closure of major technical issues.** There is cost growth with no contingency. Design changes continue to impact schedule. Closure of major technical issues has a potential impact on designs/safety analysis.

   Strategy/Status: A realistic schedule and budget were developed and discussed with the regulators. Alternate funding sources are being pursued, and a manager assigned to manage technical issue closure. Actions and target resolution dates were identified. The decision not to remove aluminum hydroxide beyond routine cleaning appears feasible. Thermal-gravimetric analysis (TGA) tests are scheduled to resolve oxidation rate issue and eliminate the need for the remaining whole element tests.

2) **PFP FMMR.** The self-imposed restriction has been in effect 16 months. Affected activities include cementation of bulk plutonium-bearing materials, thermal stabilization of oxides, and Segment #4 duct terminal clean out. Cost and schedule impacts are expected as a result of the work restriction.

Strategy/Status: A formal readiness assessment approval was received for restart of Group 1 Operations. Two fissile material moves with Management Oversight Plans were completed: a high radiological move from 230-B to Vault 175; and a 55 gallon drum move. The focus is now on conducting the Phase II Operational Readiness Review (ORR).

KEY INTEGRATION ACTIVITIES

The following are the key integration activities that are currently underway and cross project lines. These activities are being addressed by inter-discipline and inter-project groups.

- **Issue:** Continued 2727-W operations, maintenance and surveillance.
  Interface: TWRS/Waste Management
  Status: Continued surveillance/maintenance cost estimate during April as the basis for shared facility responsibility.

- **Issue:** Canister Storage Building (CSB) availability for TWRS.
  Interface: TWRS/SNF/Waste Management
  Status: Defining interfaces; TWRS will utilize separate cask handling equipment; developing detailed operating schedule (to define construction window.)

- **Issue:** Exchange 46 inactive waste sites.
  Interface: ER/TWRS/Systems Engineering
  Status: Revised MOA allows site-by-site transfer. BHI/TWRS preparing transfer packages. New LMHC contract language for inactive TWRS sites will include the 19 future sites from BHI.

- **Issue:** BNFL sample residue waste returns.
  Interface: Waste Management/TWRS
  Status: BCR in process requesting $306,000 to dispose of waste.

- **Issue:** 324 Facility Shipments to Low-Level Waste Burial Ground.
  Interface: Waste Management/Facility Stabilization
  Status: Obtaining low-level waste documentation and approvals prior to shipment.

- **Issue:** N Basin Fuel Transfer to 327 Facility
  Interface: Facility Stabilization/SNF/RL/BHI/Ecology/WDOH
  Status: Final shipment is expected May 1, 1998; ~60 pounds of additional fuel was found, which may increase remaining shipment to six canisters (approaching limits of 327 Facility).

- **Issue:** TWRS sludge settle and decant testing.
  Interface: Facility Stabilization/TWRS/Pacific Northwest
  Status: Memorandum of Understanding (MOU) signed. Tasks will be conducted in 324 Building C-Cell during FY 1998 and FY 1999.

- **Issue:** 324 Building SNF removal.
  Interface: SNF/Facility Stabilization
  Status: Joint contractor team developing plan; evaluating schedule changes.

- **Issue:** Vaults for glass canisters.
  Interface: SNF/TWRS
  Status: Preparing programmatic agreement to define interface. Reviewing for impacts of SNF schedule revisions.

- **Issue:** N Basin fuel chips.
  Interface: SNF/ER
  Status: First shipment completed in January. Second shipment planned for May 29, 1998.

- **Issue:** Fuel movement from 400 to 200 Area ISA.
  Interface: SNF/Acceptance Review Team (ART)
  Status: NOC for 200 Area ISA was coordinated with ART; approval needed by April 30. Interface closed; **issue closed**.

- **Issue:** K Basins deactivation integration.
  Interface: SNF/Facility Stabilization
  Status: Integrating Tri-Party Agreement milestones into SNF Project. BCR approved to transfer scope.

- **Issue:** Rail car deactivation.
  Interface: SNF/Waste Management/Facility Stabilization
  Status: Identifying alternatives for 100-K railcar wastes.

- **Issue:** 327 Building Fuel Removal
  Interface: SNF/ Facility Stabilization
  Status: Initiated detailed planning and long lead procurement.

- **Issue:** Disposition of sodium coolant.
  Interface: ART/Facility Stabilization/TWRS/Waste Management
  Status: TWRS milestone M-50-03 confirmed advanced pretreatment will not be required. If FFTF is shutdown, the baseline will be developed considering the use of FFTF sodium to produce sodium hydroxide for TWRS use.

- **Issue:** Railroad shutdown.
  Interface: Landlord/TWRS/Waste Management/Facility Stabilization/ART/SNF
  Status: On schedule for September 30, completion.